

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 1-13 are pending in the present application. Claims 1-2, 4-5, 8, and 10 are amended. Claims 11-13 are newly added. Claim 9 is withdrawn. Support for the amendments to Claims 1 and 10 can be found in the specification as published at least at paragraphs [0126] and [0131], for example. Support for the amendments to Claims 2, 5, and 8 is self-evident. Support for the amendment to Claim 4 can be found in Figure 8, for example. Support for newly added Claims 11-13 can be found in the specification as published at least at paragraphs [0082] and [0149], for example. Thus, no new matter is added.

In the outstanding Office Action, the Restriction Requirement dated October 9, 2008, was made Final. The outstanding Office Action objected to the drawings under 37 C.F.R. § 1.83(a). The outstanding Office Action rejected Claims 1-8 and 10 under 35 U.S.C. § 112, second paragraph, as incomplete for omitting essential elements. The outstanding Office Action rejected Claims 1-8 and 10 under 35 U.S.C. § 103(a) as unpatentable over Nelson et al. (U.S. Patent No. 6,529,377, herein "Nelson").

In response to the objections to the drawings, Claim 4 is amended.

In response to the rejection of Claims 1-8 and 10 under 35 U.S.C. § 112, second paragraph, as incomplete for omitting essential elements, Claims 1 and 10 are amended to recite the heat transport device includes a body, and that the second concavity is configured to cooperate with the body so as to form a liquefaction chamber configured to liquefy the gas-phase working fluid vaporized at the vaporization chamber to the liquid-phase working fluid.

Applicants respectfully traverse the rejection of Claims 1-8 and 10 under 35 U.S.C. § 103(a) as unpatentable over Nelson.

Amended independent Claim 1, recites, in part:

a first base plate including a liquid suction and retention unit provided to retain a liquid-phase working fluid by capillary force,

a body with protrusions on a bottom face thereof,

a second base plate facing the first base plate, the second base plate includes...

a second concavity cooperating with the body to form a liquefaction chamber to liquefy the gas-phase working fluid vaporized at the vaporization chamber to the liquid-phase working fluid,

a first ditch forming a channel to transport the gas-phase working fluid from the vaporization chamber to the liquefaction chamber, and

a second ditch forming a further channel to transport the liquid-phase working fluid from the liquefaction chamber to the liquid suction and retention unit

Thus, the heat transport device includes a first base plate with a liquid suction and retention unit provided to retain a liquid-phase working fluid by capillary force, and a second base plate that faces the first base plate. The second base plate includes a second concavity that cooperates with the body with protrusions on a bottom face so as to form a liquefaction chamber to liquefy the gas-phase working fluid vaporized at the vaporization chamber to the liquid-phase working fluid, a first ditch forming a channel to transport the gas-phase working fluid from the vaporization chamber to the liquefaction chamber, and a second ditch that forming a further channel to transport a liquid-phase working fluid from the liquefaction chamber to the liquid suction and retention unit.

Turning now to the cited art, Nelson describes an integrated cooling system. The outstanding Office Action asserts that the second set of fins (335) in Nelson are a liquid suction and retention unit.¹ However, Applicants respectfully note that the fins (335) described in Nelson are not a liquid suction and retention unit. The fins (335) in Nelson do

¹ See outstanding Office Action at page 3.

not retain a liquid-phase working fluid, much less retain a liquid-phase working fluid by capillary force. Instead these fins (335) enhance heat transfer within the right cavity (315B).² Furthermore, the fins (335) in Nelson may be discarded if the cavities (315A), (315B) are spaced significantly proximal to each other and if the center layer (305C) is relatively thin.³

In addition, Nelson fails to describe a concavity that cooperates with a body with protrusions on a bottom face so as to form a liquefaction chamber to liquefy the gas-phase working fluid vaporized at the vaporization chamber to the liquid-phase working fluid. In fact, Nelson is silent regarding a liquefaction chamber that liquefies gas-phase working fluid that is vaporized at a vaporization chamber to liquid-phase working fluid, as the cooling liquid in Nelson always remains in a liquid-phase. Nelson is also silent regarding a vaporization chamber as the cooling liquid in Nelson never changes into a gas-phase. In contrast, amended independent Claim 1 recites a working fluid that changes between a liquid-phase working fluid and a gas-phase working fluid.

Furthermore, Nelson fails to describe a ditch forming a channel to transport a gas-phase working fluid from a vaporization chamber to a liquefaction chamber. Nelson also fails to describe a ditch forming a channel to transport a liquid-phase working fluid from a liquefaction chamber to a liquid suction and retention unit. Instead, Nelson describes first and second tubes (320A), (320B) that connect the left cavity (315A) to the right cavity (315B) that form a closed loop circuit for a liquid to flow.⁴ In contrast, amended independent Claim 1 recites a ditch forming the channel to transport a gas-phase working fluid from the vaporization chamber to a liquefaction chamber and a ditch forming a channel to transport a liquid-phase working fluid from a liquefaction chamber to a liquid suction and retention unit.

Accordingly, for at least the above-noted reasons, Applicants respectfully submit that amended independent Claim 1 patentably distinguishes over Nelson. Amended independent

² See Nelson at column 5, lines 35-37.

³ See Nelson at column 5, lines 44-47.

⁴ See Nelson at column 5, lines 21-27.

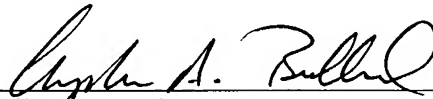
Claim 10 recites substantially similar features as amended independent Claim 1, and patentably distinguishes over Nelson for at least the same reasons that amended independent Claim 1 does. Therefore, Applicants respectfully request the rejection of Claims 1-8 and 10 be withdrawn.

Newly added dependent Claims 11-12 each depend, directly or indirectly, from amended independent Claim 1 and patentably distinguish over Nelson for at least the same reasons that amended independent Claim 1 does. Newly added dependent Claim 13 depends from amended independent Claim 10 and patentably distinguishes over Nelson for at least the same reasons that amended independent Claim 10 does.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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